UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
ENVIRONMENTAL ASSESSMENT

September 3, 2013

MEMORANDUM

SUBJECT: Review of the *Revised* Incinerator Operating Limits Petition for Sumitomo Metal Mining Pogo, LLC – Alaska

FROM: Zachary T. Hedgpeth
Zach Hedgpeth, PE
Environmental Engineer, ESU, OEA

TO: Heather Valdez, Environmental Engineer
Tribal and Air Toxics Unit, OAWT

As you requested, I've reviewed the "Sumitomo Metal Mining Pogo LLC, Revised Petition Pursuant to 40 CFR 60.2115", dated August 6, 2013.

I have the following comments regarding the petition:

1. *Waste composition.* The revised petition explicitly excludes waste composition as an operating parameter under the NSPS. However, the petition states that the facility keeps records of the weights of each type of waste loaded during each burn cycle in order to demonstrate compliance with 40 CFR 60.2145(d), which requires that "you must burn only the same types of waste used to establish operating limits during the performance test." I recommend that quantified limits on the proportional composition of waste in each charge or over a reasonable averaging period be included as an operating parameter under the NSPS. Waste composition is one of the most significant factors impacting incinerator performance with respect to air pollutant emissions, and limits ensuring that the incinerator continues to be operated in a manner similar to its operation during the performance test should include specific waste composition limits. Since the facility already collects and records the weight of each type of waste included in each charge to the incinerator, the data collection described should be sufficient to calculate the proportion of each charge comprised of each type of waste by weight. The range of waste compositions in each charge during testing would be used to establish the acceptable ranges for each waste stream. Specific waste categories should be established which include descriptions of each waste stream and identification of the types or sources of waste which are included in each.
2. *Data collected during June 28-30, 2013 testing must be provided.* As stated in the opening paragraph to the revised petition cover letter, Pogo relied upon and incorporates data collected during the recent emission testing in the revised

petition, yet none of the emissions or parametric data collected during the testing has been provided. A rigorous review of the petition is not possible without this data.

a. *Relationship between proposed parameters and emissions.* The revised petition includes only limited information addressing the requirements of 40 CFR 60.2115(b) and (c), which require that the petition include information discussing the relationship between the proposed operating parameters and emissions, including how the proposed limits on these parameters will serve to limit emissions of regulated pollutants and how the acceptable ranges or minimum/maximum values for the parameters were set. Considering that the recent testing conducted June 28-30, 2013 forms a significant portion of the basis for the proposed operating parameters and limits, submittal of detailed information and data collected during the June testing which documents the proposed parameters and their values during the testing, along with measured emission values would constitute a significant body of information addressing the requirements in these sections. I recommend that Pogo be required to submit the emissions and parametric data collected during the June testing, along with an explanation of how the data was used to develop the proposed parameters and associated limits.

b. *Context of Initial Compliance Testing was not provided.* Since Pogo has not provided the results of the unofficial emission testing conducted at the end of June, the specific context within which the initial compliance testing for purposes of the NSPS is unclear. Since Pogo has submitted a revised petition, it appears that the June test results indicate that the incinerator may be able to comply with the NSPS limits without add-on air pollution control equipment; however, this is an assumption. Pogo should provide the data from the June testing and clearly state their expected path forward and clarify the context within which the initial compliance test will be conducted.

3. *Management of parametric data.* The petition does not explicitly state which method will be used to record, process, and store the parametric data used to establish compliance with the parametric operating parameter minimum and/or maximum values. The petition should state whether the data will be manually recorded or whether an automatic data acquisition and recordkeeping system is proposed or currently in use. Use of an automated data acquisition system for the parameters proposed under the NSPS is strongly preferable to manual recording, which cannot realistically meet the requirement for continuous monitoring. The specific details regarding data management, specifically including data collection frequency and calculation of averages over specific periods of time should be addressed.

4. *Terminology for maximum/minimum parameter values.* On the third page, the revised petition describes the proposed minimum and/or maximum values for each parameter using the language from the NSPS, specifically describing minimum

values as "lower" values and maximum values as "higher" values. The NSPS terminology appears to envision the establishment of acceptable ranges for operating parameters, thus the use of the terms "lower" and "higher". When establishing a single value which will function as a minimum or maximum value for an operating parameter, use of the "lower" and "higher" terminology can be confusing. I recommend that the petition be revised to clearly establish each parametric value which is not part of a range as a "minimum" or "maximum" value for clarity.

5. *Primary and secondary combustion chamber temperatures.* The revised petition proposes a minimum primary combustion chamber temperature of 1,500° F, a minimum secondary combustion chamber temperature of 1,800° F, that the temperatures be recorded roughly every 5 minutes during the burn cycle, and that compliance with the minimum temperatures be determined by calculating one-hour block average temperatures.

    a. On page 2 of the cover letter, Pogo states that the proposed operating parameters will be continuously monitored, but then attempts to define continuous monitoring as discontinuous data recording at specific intervals. This definition of continuous monitoring is not valid. In order to comply with the NSPS, the parameters must be continuously monitored, which means that each parameter has an instantaneous reading available at all times. The data reduction, processing, and recording are separate issues from continuous monitoring. Recording of temperature data every 5 minutes is reasonable, but I recommend that these reflect 5-minute average temperatures rather than "snapshot" or instantaneous temperature readings recorded every 5 minutes. Snapshot readings taken every 5 minutes can miss significant temperature swings while a 5 minute average will reflect the actual temperature variation during each 5 minute period.

    b. Calculation of one-hour average temperatures reflects a change from the standard 3-hour block average specified in the NSPS. I believe the use of a one-hour average is more appropriate for the Pogo incinerator, given the relatively short burn duration. However, it will be necessary to recognize that EPA is agreeing to a change from the NSPS standard averaging time. I also recommend that the monitoring approach use one-hour rolling average values rather than block averages.

    c. Table 1 near the end of the petition lists the minimum primary combustion chamber temperature at 1,400° F, which appears to be a typographical error. The temperature should be revised to 1,500° F to be consistent with other citations in the revised petition.

6. *Primary and secondary chamber burn times.* The revised petition proposes a primary burn time of 5 hours, a secondary burn time of one hour, and that the burn times will be monitored using a digital clock. The primary burn time will begin at the time of the final waste charge, and the secondary burn time will begin at the end

of the primary burn cycle. These burn times are consistent with previously submitted information. Page 1 of the petition contains a confusing statement that should be clarified or corrected. The petition states "Secondary Combustion Chamber Burn Time Limit: Minimum = 1 hour burn time = 5 hours after the end of the primary burn cycle". In order to be consistent with other statements in the revised petition and cover letter, this should say "1 hour after the end of the primary burn cycle".

7. *Waste load interval.* The revised petition proposes a waste load interval of 15 minutes and that the monitoring device will be a digital clock. Each load interval will begin when waste is charged to the primary combustion chamber and the charge door is closed, and end when the charge door is opened to admit the next load. The proposed burn interval of 15 minutes is consistent with previously submitted information. The facility should clarify the precise event that signifies the beginning of each load interval. The petition is not clear whether the load interval begins when waste is charged or when the charge door is closed. It seems reasonable that the charge interval begin when waste is charged. A specific action that may be appropriate would be activation of the charge ram.

8. *Waste load weight limit.* The revised petition proposes that the weight of each load be determined with an electronic floor scale are recorded prior to the waste being charged into the incinerator. The petition states that the proposed waste load weight limit of 60 pounds (lbs) is 40% of the manufacturer's maximum design capacity. At a charge interval of 15 minutes, this would result in a maximum design capacity of 600 lbs/hour. Information documenting the manufacturer's maximum design capacity has not been submitted. The first footnote on page 1 of the revised petition states that "in practice, Pogo limits the batch load weight to 45 lbs or less". EPA should clarify to Pogo that the batch charge weight combusted during the initial compliance testing will establish the allowable maximum batch charge weight for future operations. Based on this, it appears the initial compliance testing should be conducted at the proposed maximum charge weight of 60 lbs per charge.

9. *Stack gas flow rate.* The revised petition explicitly excludes stack gas flow rate as an operating parameter under the NSPS. The exclusion is based on stack gas flow rate data collected during the testing conducted June 28-30, 2013 which apparently shows minimal variation over many hours. No data from the cited testing has been submitted in support of the petition, so rigorous evaluation of this issue is not possible at this time.

If you have any questions about these comments, please call me at 3-1217.

C: Mark Filippini, Unit Manager, ESU, OEA
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